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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/807,902	04/19/2001	Kenichi Arimura	50212-211	7482

7590 01/28/2004

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Houston, TX 77056

EXAMINER

KACKAR, RAM N

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 01/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/807,902

Applicant(s)

ARIMURA ET AL.

Examiner

Ram N Kackar

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2 Claims 1-3, 7 and 9-12 are rejected under 35 U.S.C. 103(a) as unpatentable over Goodman (2002/0043337) in view of Mahawili (US 6007635).

Goodman discloses a semiconductor production apparatus having a susceptor having recesses of an elongated form in the lower surface of the susceptor (Figs. 1, 2a, 2b and 8 and paragraphs 125-144). The susceptor is supported by a main shaft having radially extending arms, wherein the arms have protrusions as claimed that engage the recesses. The recesses have portions, both at their tops (paragraph 127) and their bottoms, which extend parallel to the susceptor surfaces. The arrangement allows movement of the susceptor in a radial direction relative to the protrusions.

Goodman does not state that the recesses have a closed end on an outer peripheral side thereof.

Mahawili discloses a susceptor, which has recesses underneath of an elongated shape having closed end on an outer peripheral side (Fig 1 and 2 42, 44, 46 and 48) to enable unrestricted thermal expansion (Col 5 lines 38-55).

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to use recesses of closed end because that makes alignment of the susceptor easier.

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Regarding the phrase "protrusions being configured to engage said closed end" it may be noted that the protrusions are generally designed so that there may be some gap between the protrusion and the closed end to take care of manufacturing tolerances. Therefore Mahawili's disclosure would be equivalent and obvious.

3        Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goodman (2002/0043337) in view of Mahawili (US 6007635) as applied to claim 1-4, 7 and 9-12 and further in view of Nulman (5,098,198).

Nulman discloses a low mass susceptor similar to that of Goodman, and Nulman (col. 1, lines 55-59) teaches that a silicon carbide coated graphite susceptor can be used as an alternative to a silicon carbide susceptor.

It would have been obvious to one skilled in the art to substitute a silicon carbide coated graphite susceptor for the silicon carbide susceptor used in Goodman's apparatus, because Nulman teaches that a silicon carbide coated graphite susceptor can be used successfully in a semiconductor processing apparatus, graphite coated susceptors being very common for economy and thermal properties.

4        Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goodman (2002/0043337) in view of Mahawili (US 6007635) as applied to claim 1-4, 7 and 9-12 and further in view of deBoer (5,427,620),

deBoer discloses a semiconductor processing apparatus similar to that of Goodman, and teaches (col. 7, lines 8-15) the use of a support shaft made of fused quartz, which is silica glass.

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It would have been obvious to one skilled in the art to use a fused quartz support shaft in Goodman's apparatus, because deBoer teaches that a transparent quartz support shaft desirably transmits radiant heat.

***Response to Amendment***

Applicant's arguments filed 12/01/2003 have been fully considered but they are not persuasive.

Regarding claim 1 applicant argues that the combination of Goodman and Mahawili does not suggest support pins that engage closed ends of elongated depressions in a substrate holder at room temperature. This argument has been repeated in respect of claims depending upon claim 1.

Applicant has however not stated the reason or perceived deficiency in the combination.

As stated in the office action, Mahawili discloses pins (Fig 1-46) engaged in elongated but closed depressions (Fig 2-48) underneath the substrate holder. The purpose is also precisely that of positioning and thermal expansion (Col 5 lines 42-55).

Therefore the rejection is maintained and repeated.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

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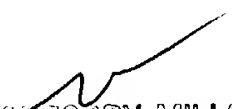
will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 571 272 1439. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0661.

RK

  
GREGORY MILLS  
SUPERVISOR  
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